



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: Thierry STORA

Confirmation No.: 9784

Application No.: 10/723,922

Group Art Unit: 1743

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Examiner: Monique T. Cole

For: STABLE TRANSPARENT PERFUMING  
EMULSION

Attorney Docket No.: 81455-5520

**RULE 132 DECLARATION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Pascal Beaussoubre, hereby submit the following comments as a person of ordinary skill in the art of the subject matter of this application:

1. I have a degree in Physical Chemistry Engineering and over seven years experience as a chemist in the emulsion technologies and the formulation of perfumed cosmetic compositions. I am presently working at Firmenich, SA, the assignee of the present application. Over the past five years, I have been actively involved in research regarding the use of emulsions in perfuming compositions and the evaluation of such emulsions. I currently hold the position of Engineer and my specific duties include the development of new technologies for the formulation of perfumed emulsions and consumer products containing them.

2. I am familiar with the present invention, its claims and the office actions that include rejections of such claims.

3. The present invention relates to an alcohol free perfuming composition in the form of a transparent water-in-oil or oil-in-water emulsion that is stable and does not exhibit sedimentation or creaming over time. This enables the emulsion to be used in perfume compositions that are capable of being sprayed without leaving residues. This emulsion comprises an aqueous phase and an oily phase containing at least 3% by weight of perfuming ingredients relative to the total weight of the composition. Stability of the emulsion is obtained by controlling the difference between the density of the oily phase and that of the aqueous phase to be less than or equal to 0.007. In addition, the oily phase of the emulsion includes a volatile fluorinated oil having a density higher than 1.

4. I understand that US patent 6,573,235 to Surbled et al. ("Surbled") has been cited to reject the claims. Surbled does not disclose or teach the present invention. Surbled does have some superficial similarities to the present invention because it has similar objectives, such as the replacement of ethanol in a composition. Surbled's solution to this problem is to solely use hydrofluoro ethers instead of ethanol. It is clear that with this solution, hydrophobic hydrofluoro ethers constitute the entire solvent. There is only one phase, and it is hydrophobic. Accordingly, the amounts of hydrofluoro ethers used are comparatively high, making up all the cosmetic composition except for the perfuming ingredient. The examples of Surbled support this observation in that they illustrate cosmetic compositions consisting of the hydrofluoro ether and the perfuming ingredients dissolved therein. It is further reported in these examples that the perfuming ingredients are well miscible with these ethers (see tables of examples 1, 3, 5 and 7). Thus, Surbled does not disclose an emulsion.

5. And while Surbled does mention that at least one co-solvent can be used, and that this solvent can be ethanol or water, Surbled does not teach how much co-solvent to use nor how to render this co-solvent compatible with the solvent to form a stable and transparent emulsion. It would appear that the amount of co-solvent should be less than that which is miscible in the disclosed solutions. For example, in Example 5, line 8-10, Surbled looks carefully on the occurrence of a second phase, such second phase being "a consequence of the insolubility of the essential oil in the ENFB" (ethoxy nonafluorobutane). This illustrates that Surbled requires that the perfuming ingredients (here, natural extracts, essential oils) be highly miscible with the solvents and that the occurrence of more than one phase, which would be the

case in an emulsion, is to be strictly avoided. Even if one would add a greater amount of water than that which is miscible, this still does not teach or suggest that an emulsion can be or should be formed. And as a consequence of not using emulsions, Surbled also lacks a further important feature of the invention, namely the creation of a stable emulsion by controlling the density differences between the oily and the aqueous phases of the emulsion.

6. The emulsions of the invention contain water, are transparent, and constitute a completely different and unexpected way of replacing ethanol than that suggested by Surbled. According to one embodiment, the emulsion comprises a continuous aqueous phase, in other words: water, which is a much less expensive ingredient than the hydrofluoro ethers of Surbled. In addition, water is indisputably friendlier to the environment than hydrofluoro ethers. An important feature of this invention is that the emulsion is transparent. In order to be transparent, an emulsion must fulfill certain requirements. Transparency of emulsion is, therefore, not a self-evident matter and is not inherent for all emulsions (see, e.g., milk which is not a transparent emulsion). In the present invention, transparency is preferably achieved by matching the refractive index of the dispersed and continuous phases. Thus light passing through the sample is not scattered and transparency is achieved (see published application at paragraph [0025]).

7. The emulsion permits the substantial reduction of the use of fluorinated compounds in the claimed composition allowing for the presence of water as a continuous phase in an emulsion. For this reason, the examples of the present application all contain from about 15-17 wt.% of water. In all these examples, the fluorinated oil necessary to adjust the density of the oily phase of the emulsions of the present invention provides only about 13-17 wt.% of the total emulsion. Examples 1 – 7 of Surbled, in comparison, all provide 10 or 15 g of perfumed oil (essential oil, of lavender, peppermint, etc) in 100 g of hydrofluoroether, the latter thus constituting 87 wt.% to 90 wt% of the total cosmetic composition. The comparison of the examples of the prior art and those of the present invention, respectively, prove that the presently claimed emulsions permit a manifold reduction of fluorinated compounds in the overall composition.

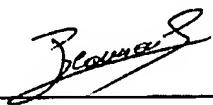
8. Also, the use of an emulsion that includes an oily phase comprising a volatile, fluorinated oil provides unexpected advantages over the simple substitution of such oils

for ethanol in a solution. For example, the emulsion of the present invention is physically stable, in particular with regard to the avoidance of creaming and sedimentation problems. This is achieved due to the control of the densities of the phases and represents an important advantage when the emulsions are incorporated in perfume compositions, as creaming and sedimentation problems are avoided. Preferably, stability of the emulsion is achieved by modifying the oily phase to have the same density as the aqueous phase, and by adding a volatile fluorinated oil with a density of  $>1$ .

9. As Surbled is based on simply replacing ethanol in cosmetic compositions by hydrofluoro ethers, this does neither disclose, nor suggest or make obvious to the skilled person that the use of much more complex systems like emulsions, let alone stable, transparent emulsions, can be used to add perfuming ingredients to a composition without visible detection. With the viscosity of the present formulations being relatively low, an additional advantage is that the formulation can be sprayed without leaving visible residues.

10. I further declare that all statements made in this declaration of my own knowledge are true and that all statements made on information and belief are believed to be true ; and further these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code and that such wilful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated this 21<sup>st</sup> day of April, 2006

  
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Pascal Beaussoubre